

EXHIBIT 9

**TO PLAINTIFF'S RESPONSE IN OPPOSITION TO DEFENDANTS' MOTION *IN LIMINE*
NUMBER 2, SEEKING EXCLUSION OF EXPERT TESTIMONY**

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What Do Potential Jurors Know About Police Interrogation Techniques and False Confessions?[‡]

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Psychological police interrogation methods in America inevitably involve some level of pressure and persuasion to achieve their goal of eliciting confessions of guilt from custodial suspects. In this article, we surveyed potential jurors about their perceptions of a range of psychological interrogation techniques, the likelihood that such techniques would elicit a true confession from guilty suspects, and the likelihood that such techniques could elicit a false confession from innocent suspects. Participants recognized that these interrogation techniques may be psychologically coercive and may elicit true confessions, but believed that psychologically coercive interrogation techniques are not likely to elicit false confessions. The findings from this survey study indicate that potential jurors believe that false confessions are both counter-intuitive and unlikely, even in response to psychologically coercive interrogation techniques that have been shown to lead to false confessions from the innocent. This study provides empirical support for the idea that expert witnesses may helpfully inform jurors about the social science research on psychologically coercive interrogation methods and how and why such interrogation techniques can lead to false confessions. Copyright © 2009 John Wiley & Sons, Ltd.

INTRODUCTION

Confessions are one of the most important types of evidence for solving crimes (Greenwood & Petersilia, 1975). Because criminal suspects rarely spontaneously confess, however, police detectives regularly employ interrogation techniques to overcome denials and elicit confessions (Feld, 2006a,b; Leo, 1996; Wald, Ayres,

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Hess, Schantz, & Whitebread, 1967). One important category of techniques is that which includes psychological, as opposed to physical, pressures to elicit a confession. American police first described psychological interrogation methods in the early 1940s (Inbau, 1942; Kidd, 1940). Since then, police authors have published numerous interrogation training manuals that contain numerous interrogation methods, including psychological techniques, and every year tens of thousands of police attend training classes to learn how to employ these methods (Inbau, Reid, Buckley, & Jayne, 2001; Leo, 2008). Further, over the years, these psychological interrogation methods have become increasingly specialized, sophisticated, and effective (Leo, 1992). They rely on a multi-step psychology of influence and persuasion to accomplish their goal of moving guilty suspects (for whom they are designed) from denial to admission (Davis & O'Donohue, 2004; Ofshe & Leo, 1997).

Psychological interrogation methods are, of course, designed only to be used on guilty suspects (Inbau et al., 2001). When misapplied to the innocent, however, the methods can, and sometimes do, lead to false confessions (Drizin & Leo, 2004; Leo & Ofshe, 1998). As many have pointed out, the idea that an innocent person would falsely confess to a crime he or she did not commit in response to purely psychological methods of interrogation is highly counter-intuitive (Kassin, 2008; Leo, 2001; McMurtrie, 2005). Indeed, "false confessions might seem unlikely, irrational and perhaps so rare as to be exotic for those unfamiliar with modern psychological techniques" (Ofshe & Leo, 1997, p. 983). Yet social scientists have been empirically studying the phenomenon of police interrogation and false confessions for decades (Gudjonsson, 2003; Kassin & Wrightsman, 1985; Redlich & Goodman, 2003; Zimbardo, 1971). Researchers have analyzed a range of issues relevant to interrogations and confessions, including, for example, police interrogation training procedures, the assumptions and techniques employed during interrogations, the impact of *Miranda* warnings, the psychology and effects of interrogation techniques, and the potential causes and risk factors (situational and dispositional) of police-induced false confessions (Davis & O'Donohue, 2004; Gudjonsson, 2003; Kassin, Drizin et al., unpublished manuscript). What has emerged from this research is a general consensus about the conditions under which interrogation practices may lead innocent suspects to confess, falsely, to having committed a crime.

The findings from research have also played out in actual legal cases. Indeed, there is now a surprisingly large number of cases (many of them high profile) in which innocent individuals who falsely confessed during police interrogation were, nevertheless, convicted by juries, only to later have their factual innocence proven beyond any reasonable doubt (Drizin & Leo, 2004; Leo & Ofshe, 1998). Since 1989, more than two hundred individuals have been exonerated by DNA evidence (Innocence Project, 2009); even more have been exonerated by non-DNA evidence (Gross, Jacoby, Matheson, Montgomery, & Patil, 2005). Across these samples, police-induced false confessions were evident in between 15 and 25% of these cases, making it one of the likely leading causes of wrongful conviction (Garrett, 2008; Leo, 2008). In light of the research on wrongful conviction in the last two decades, the view that false confessions "are made by freaks and occur freakishly" (Ayling, 1984, p. 1155) is no longer tenable.

Although police-induced false confessions may lead to the wrongful conviction of the innocent, they do not always do so (Drizin & Leo, 2004). That is, the legal system

contains multiple safeguards designed to prevent the use of false or unreliable evidence against a criminal defendant. These safeguards include, for example, a formal presumption of innocence, assigning the burden of proof to the prosecution, and allowing a defendant to present pre-trial motions to suppress evidence that was obtained in violation of his or her constitutional rights. One critical safeguard, which is directly relevant to the current study, is the use of expert witness testimony at trial. The role of the expert witness in this situation would be to provide what Monahan and Walker (1988) describe as “social framework evidence,” which is testimony that provides the trier-of-fact (judge or jury) with an appropriate context to interpret specific evidence. Thus, the expert would educate the jury or judge about the process and tactics of interrogation and the psychological factors that might lead a suspect to falsely confess. Experts on false confessions may, for example, discuss the scientific research literature documenting the phenomenon of police-induced false confessions; explain how and why particular interrogation methods and strategies can cause the innocent to confess; identify the disposition and situational factors that increase the risk of false confession; and discuss generally accepted indicia of reliability for interrogation-induced statements, admissions, and confessions (Costanzo & Leo, 2007; Davis & O’Donohue, 2004; Leo, 2001).

Because of the substantial weight that jurors place on confessions, a confession that was false may well lead to assumptions of guilt, even in light of contradictory evidence. Empirical studies have shown that confession evidence biases criminal justice officials and triers-of-fact at each stage of the criminal process (Leo, 1996). Once a confession is obtained, police tend to “close” cases as solved and refuse to investigate other sources of evidence, and prosecutors tend to charge suspects with the highest number and types of offenses, set bail higher, and are far less likely to initiate or accept plea bargains (Drizin & Leo, 2004; Leo & Ofshe, 1998; but see Redlich, *in press*). Mock jury studies have shown that confessions have more impact than other forms of evidence (Kassin & Neumann, 1997; Miller & Boster, 1977) and that people do not appropriately discount confession evidence—even when they judge the confession to be coerced and involuntary (Kassin & Wrightsman, 1980; Kassin & Sukel, 1997), when they say it does not influence their decisions (Kassin & Sukel, 1997), and when they are presented secondhand by an informant who is motivated to lie (Neuenschatz, Lawson, Swanner, & Meissner, 2007). This literature suggests that, even when real world jurors recognize that interrogators used coercion to elicit confession evidence, this fact is not likely to temper their judgments of the defendant’s guilt. Recent mock jury studies involving child suspects suggest that mock jurors rely quite heavily on confessions, even when they were obtained via questionable interrogation tactics (Redlich, Gheiti, & Quas, 2008; Redlich, Quas, & Gheiti, 2008). Moreover, outside of the laboratory, aggregated case studies have demonstrated that when proven false confessors take their case to trial, juries convict them 73% (Leo & Ofshe, 1998) to 81% (Drizin & Leo, 2004) of the time. In short, confession evidence—even when false—is highly prejudicial to triers-of-fact and often leads to convictions, including potentially wrongful convictions of the innocent.

Thus, expert testimony may be especially important to prevent a miscarriage of justice. By the time a defendant gets to trial, challenging the reliability of his or her confession may be the only meaningful safeguard left against wrongful conviction (Chojnacki, Cicchini, & White, 2008). Like other forms of expert testimony, the

admissibility of expert testimony on potentially false confessions is governed by the *Frye* standard, the *Daubert* standard, and Rule 702 of the Federal Rules of Evidence (*Daubert v. Merrell Dow Pharmaceuticals*, 1993; Federal Rules of Evidence, 2006–2007; *Frye v. United States*, 1923). The subject matter of expert testimony must be beyond common knowledge, aid and assist the trier-of-fact, and meet a minimum standard of reliability or general acceptance in order to be admissible (see Borgida & Fiske, 2008). The purpose of the present study is to begin to provide insight into what potential jurors know and believe about interrogation techniques. Only a few researchers have, to date, examined directly potential jurors' perceptions of interrogation techniques and their effect on a suspect's decision-making and likelihood of reliable confession. Most notably, Kassin, Meisser, and Norwick (2005) demonstrated that mock jurors (college students and police investigators) were generally unable to distinguish false confessions from true confessions in an experimental context. In a survey of potential jurors, Chojnacki et al. (2008) demonstrated that an overwhelming majority of respondents did not believe they knew enough about interrogation tactics and confessions to make informed judgments about confession evidence in criminal trials. According to Chojnacki et al. (2008, p. 40), "there is now evidence that a significant proportion of jurors do generally assume that suspects who confess to crimes are guilty; and... jurors are uninformed about subtle interrogation pressures, their relationship to false confessions, and the personality characteristics of individuals who are most likely to succumb to such tactics."

In the current study, we surveyed potential jurors about their beliefs regarding specific interrogation tactics. We were specifically interested in individuals' perceptions of (a) the techniques' coerciveness, (b) the likelihood that the techniques could elicit a true confession from guilty suspects, and (c) the likelihood that the techniques could elicit a false confession from innocent suspects. We expected that individuals would recognize that psychological pressure and other nonphysical persuasion interrogation techniques may be coercive, but these same individuals would not tend to believe that the techniques could elicit false confessions in innocent suspects. In other words, we expected individuals to adopt a general belief that, although interrogation techniques may be coercive, they are unlikely to elicit false confessions.

METHOD

Participants

Two hundred and sixty-four jury-eligible students from a large university in southern California completed the study. Participants were recruited from an introductory criminology course, a required course for students across four majors, a prerequisite for further criminology courses, and a general education elective course for students across campus. Students' mean age was 19.78 years; 64% were male; and their ethnicity varied: 38% were Asian, 32% were Caucasian, 13% were Hispanic, 16% were other or multiple ethnicities, and 1% were African-American.

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Twenty percent of the participants had been victims of crime, and 1.5% had served on a jury. Additionally, 46% of the participants supported the death penalty, 20% did not support the death penalty, and the remainder were unsure.

Procedure and Materials

In the beginning of the academic quarter, students in the class were invited to complete a survey about their beliefs concerning the legal system. Following verbal consent, students who wished to complete the study were given a packet of questionnaires to complete.

First in the packet was a brief demographic questionnaire that asked about participants' age, education, gender, and ethnicity. Additional questions asked whether participants had ever been a victim of a crime, had ever served on a jury, and supported the death penalty.

Second was the interrogation perceptions questionnaire. Questions focused on three topics relevant to 18 interrogation techniques: (a) their coerciveness; (b) their likelihood to elicit a true confession; and (c) their likelihood to elicit a false confession (see Table 1 for a complete list of the techniques). The order of these three topics was counterbalanced. Order did not, however, affect participants' responses and is not discussed further. Participants were asked to rate each technique according to a five-point scale. For coerciveness, which was defined as removing "an individual's perception of their freedom to make a meaningful choice during a police interrogation," the scale ranged from 1 = not at all coercive to 5 = extremely coercive. For the likelihood of eliciting true and false confessions, the scale ranged from 1 = not at all likely to 5 = extremely likely.

Third was a series of questions about participants' perceptions of the importance of confession evidence, relative to other types of evidence, in solving crimes. Participants were asked how important it is for the police to have DNA evidence, a confession of guilt, an eyewitness, and evidence of a suspect's bad character. The scale ranged from 1 = not important to 5 = extremely important. Fourth and finally, participants were to provide a numeric estimate of interrogation time they believed was required to elicit a confession, as well as the maximum amount of time that they believed should be permitted to do so. Specifically, they were asked "how long the [police] need (in hours) to interrogate a suspect to elicit a confession," and "how long is the maximum amount of time (in hours) per session that [the police] should be allowed to interrogate a suspect to elicit a confession." After participants had completed the questionnaires, they were collected by a researcher, and participants were thanked for their assistance.

The 18 interrogation tactics, which were presented in a randomized order, ranged from those involving minimal psychological or physical persuasion to those involving multiple, repeated persuasive components. After data collection, they were heuristically divided into six categories (see Table 1). The categories, and the order in which we present them, follow the psychological sequence and logic of the model of interrogation influence outlined by Ofshe and Leo (1997). Ofshe and Leo (1997) described psychological interrogation as a two-step process in which police first attempt to persuade the suspects that they are caught (e.g. by accusing them of committing the crime, cutting off their denials, confronting them with true and/or false evidence, etc.) and that resistance is therefore futile. Second, police attempt to

Table 1. Interrogation tactics' mean score of coerciveness, likelihood of eliciting a true and false confession, and percentage who believed it would elicit a false confession
(*N* = 247–264)

Interrogation tactic	Coerciveness	True confession	False confession (FC)	Likely to elicit FC (%) ^g
Repeatedly accusing a suspect ^a	3.44 (1.08)	3.23 (1.06)	2.40 (1.19)	19.1
Asking the suspect to take a lie detector test ^a	2.59 (1.34)	3.77 (1.07)	1.89 (1.15)	10.8
Repeatedly telling the suspect his or her alibi is false ^b	3.40 (1.12)	3.32 (1.04)	2.36 (1.10)	16.4
Repeatedly cutting off suspect's denial of guilt ^b	3.32 (1.13)	3.02 (1.10)	2.31 (1.12)	15.6
Giving a lie detector test and truthfully telling suspect results are inconclusive ^c	2.38 (1.36)	2.90 (1.34)	1.95 (1.14)	11.6
Giving a lie detector test and truthfully telling suspect results show he or she is lying ^c	2.64 (1.43)	4.10 (0.95)	2.63 (1.16)	23.6
Confronting suspect with incriminating false surveillance camera evidence ^d	4.03 (1.20)	3.90 (1.01)	2.76 (1.16)	24.7
Confronting suspect with incriminating false DNA evidence ^d	4.22 (1.11)	4.09 (0.86)	2.94 (1.22)	33.6
Confronting suspect with incriminating false fingerprint evidence ^d	4.11 (1.06)	4.04 (0.89)	2.86 (1.21)	31.6
Giving a lie detector test and falsely telling suspect results show he or she is lying ^d	4.24 (1.12)	3.79 (1.01)	2.71 (1.14)	24.8
Implicitly suggesting suspect will receive a lenient charge for confession ^e	3.40 (1.07)	3.73 (0.82)	2.41 (1.17)	18.5
Explicitly promising suspect a lenient charge for confession ^e	3.63 (1.11)	3.91 (0.83)	2.42 (1.15)	18.4
Implicitly suggesting suspect will receive a lenient sentence for confession ^e	3.37 (1.04)	3.78 (0.76)	2.40 (1.14)	19.0
Explicitly promising suspect a lenient sentence for confession ^e	3.67 (1.12)	3.96 (0.81)	2.43 (1.12)	17.3
Implicitly threatening the suspect with physical harm if no confession ^f	4.07 (1.15)	3.32 (1.15)	2.92 (1.14)	33.6
Explicitly threatening the suspect with physical harm if no confession ^f	4.33 (1.17)	3.33 (1.13)	3.02 (1.19)	39.0
Threatening the suspect with violence if no confession ^f	4.32 (1.15)	3.33 (1.19)	3.22 (1.16)	42.9
Beating or assaulting the suspect ^f	4.44 (1.19)	3.61 (1.35)	3.70 (1.25)	60.7

^aIncluded in the accusation/re-accusation interrogation category.^bIncluded in the challenging denials interrogation category.^cIncluded in the confronting with true evidence of guilt category.^dIncluded in the confronting with false evidence of guilt category.^eIncluded in the promises of leniency interrogation category.^fIncluded in the threats/use of physical harm category.^gPercentage of responses ranging from 4 to 5 on a five-point scale (1 = not at all likely to 5 = extremely likely).

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persuade the suspects that the only way to improve their situation (e.g. reduce perceptions of blameworthiness, mitigate culpability, minimize inevitable punishment, etc.) is by agreeing to some version of the interrogators' accusations and thus confessing. Accordingly, the techniques begin with accusation, then move to the challenging of a suspect's denials and confrontation with (true and false) evidence, and finally lead to inducements (in the form of implicit/explicit promises and threats).

The first category, "accusation/re-accusation," included two tactics: (1) repeatedly accusing the suspect of committing the crime and (2) asking the suspect to take a lie detector test. The second category, "challenging denials," was composed of two tactics: (1) repeatedly telling the suspect that his or her alibi was false and (2) repeatedly cutting off the suspect's denials of guilt.

The two tactics that reflected the third category, "confronting the suspect with true evidence of guilt," were (1) telling the suspect truthfully that his or her lie detector test results were inconclusive and (2) truthfully stating that the results revealed that the suspect had lied. Four tactics were included in the fourth category, "confronting the suspect with false evidence of guilt," and included (1) falsely stating that lie detector test results revealed that the suspect had lied, (2) confronting the suspect with false evidence of video surveillance evidence, (3) confronting the suspect with false DNA evidence, and (4) confronting the suspect with false fingerprint evidence.

The fifth category, "promises of leniency," consisted of (1) implicit suggestions of a more lenient charge, (2) explicit suggestions of a more lenient charge, (3) implicit suggestions of a more lenient sentence, and (4) explicit suggestions of a more lenient sentence. The sixth and final category, "threats and use of harm," was comprised of three tactics: (1) implicit threats of physical harm; (2) explicit threats of physical harm; and (3) assaulting the suspect. In addition to raw data being presented for the individual 18 tactics, mean category scores were created by averaging the tactics included in each category.

RESULTS

Composite Scores of Interrogation Tactics

The main statistical analyses focused on participants' composite tactic scores (i.e. the six categories of tactics). These analyses investigated the relations among participants' perceptions of tactics' coerciveness and likelihood of eliciting confessions, and whether demographic characteristics were related to participants' judgments.

In general, participants rated many interrogation tactics as slightly coercive, likely to elicit a true confession, and unlikely to elicit a false one (see Table 2). Indeed, all but one of the coerciveness and true confession category means fell above 3, whereas all but one of the false confession category means fell below 3 (the midpoint of the scale, with 1 = not at all coercive and 5 = extremely coercive).

To examine how coercive participants viewed the various types of interrogation tactic to be, we conducted a one-way within-subject ANOVA predicting participants' ratings of the coerciveness of each type of tactic. The model was significant, Huynh-Feldt $F(3, 794) = 146.98$, $p < .001$, $\eta^2 = .36$. According to Bonferroni corrected *post hoc* tests, confrontation with true evidence of guilt was perceived as significantly less coercive than all other tactics, accusation/re-accusation

Table 2. Mean ratings of coerciveness, likelihood to elicit a true confession, and likelihood to elicit a false confession ($N = 249\text{--}264$)

Interrogation tactic category	Coerciveness	True confession	False confession
Accusation/re-accusation	3.02 (0.85) ^a	3.51 (0.85) ^a	2.15 (1.00) ^a
Challenging denials	3.36 (1.03) ^b	3.17 (0.99) ^b	2.33 (1.08) ^b
Confrontation with true evidence of guilt	2.51 (1.17) ^c	3.50 (0.91) ^a	2.29 (1.01) ^{ab}
Confrontation with false evidence of guilt	4.15 (0.98) ^d	3.94 (0.79) ^c	2.81 (1.06) ^c
Promises of leniency	3.51 (1.00) ^b	3.84 (0.68) ^c	2.42 (1.07) ^b
Threats/use of harm	4.29 (1.07) ^d	3.39 (1.08) ^{ab}	3.21 (1.04) ^d

Scale ranges from 1 = not at all important to 5 = extremely important. Bonferroni corrected alphas used for all significance tests, with different superscripts reflecting significantly different ratings within each column at $p < .05$.

seen as significantly less coercive than the remaining tactics, and challenging denials and promises of leniency rated as significantly less coercive than confrontation with false evidence and threats of harm (see Table 2).

We conducted similar analyses to determine whether participants judged certain tactics to be more likely to elicit true and false confessions. The ANOVAs conducted separately with participants' ratings of the likelihood of obtaining true and false confessions as within-subject dependent measures were both significant, Huynh-Feldt $F(4, 980) = 36.51$, $p < .001$, $\eta^2 = .13$ and Huynh-Feldt $F(4, 959) = 82.08$, $p < .001$, $\eta^2 = .25$, respectively. Means are presented in Table 1. For true confessions, Bonferroni corrected *post hoc* tests showed that confrontation with false evidence and promises of leniency were rated as more likely to elicit a true confession than all other tactics, and accusation/re-accusation and confrontation with true evidence were considered more likely than challenging denials to obtain a true confession (threats of harm was only rated significantly less likely to obtain a true confession than confrontation with false evidence and promises of leniency). For false confessions, threats of harm were believed to be more likely to elicit a false confession than all other tactics. In addition, confrontation with false evidence was judged as more likely to elicit a false confession than the remaining tactics, with promises of leniency and challenging denials also being seen as more likely than accusation/re-accusation to elicit a false confession (confrontation with true evidence was only rated significantly less likely to obtain a false confession than confrontation with false evidence and threats of harm; see Table 2).

Next, we examined the relations between how effective participants believed the tactics were at eliciting a true versus false confession. We specifically conducted a 2 (confession type: true versus false) \times 6 (interrogation type) ANOVA, with both factors varying within subject. Both main effects were significant, for confession type, $F(1, 246) = 343.83$, $p < .001$, $\eta^2 = .58$, and interrogation type, Huynh-Feldt $F(4, 883) = 53.71$, $p < .001$, $\eta^2 = .18$, but were qualified by a significant interaction, Huynh-Feldt $F(4, 1092) = 64.20$, $p < .001$, $\eta^2 = .21$ (see Table 1). Follow-up *t*-tests with Bonferroni corrected alphas showed that accusation/re-accusation, challenging denials, confrontation with true evidence, confrontation with false evidence, and promises of leniency showed the same pattern, such that true confessions were considered significantly more likely to occur than false confessions following the use of these tactics ($p < .05$). Participants perceived threats of harm, however, to be equally likely to elicit a true and a false confession (see Table 2).

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Given that participants viewed certain tactics as more coercive as others, we were interested in whether participants were consistent in their perceptions across tactics, or, in other words, whether participants who viewed one tactic as highly coercive (or likely to elicit a confession) tended to view the other tactics as highly coercive (or likely to elicit a confession). We thus computed correlations of participants' composite tactic ratings within each measure: coerciveness, true confession likelihood, and false confession likelihood. Participants were somewhat consistent in their ratings of coerciveness, r values across the composite scores ranging from .14 to .70 (see Table 3). However, confronting a suspect with true evidence of guilt was negatively correlated with confronting the suspect with false evidence ($r = -.22$). This negative association reflects participants' beliefs that confronting suspects with false evidence is coercive, but confronting them with true evidence is much less so. Additionally, threats and use of harm were not significantly correlated with accusation/re-accusation and leniency techniques and was negatively correlated with confrontation with true evidence of guilt ($r = -.29$). In other words, the more coercive individuals believed threats and use of harm was, the less coercive they believed that confronting suspects with true evidence of guilt was.

Within likelihood to elicit a true confession, the tactics were generally positively associated with one another, r values ranging from .14 to .63, such that individuals who held certain beliefs about one category of tactics' likelihood of eliciting true confessions held similar beliefs across the different tactic types (see Table 4). The only exception was that threats of harm was not significantly associated with accusation/re-accusation or confrontation with true evidence of guilt techniques. Finally, participants' composite scores for the likelihood of tactics eliciting a false confession were all significantly positively associated, r values ranging from .30 to .84 (Table 5).

In a final set of analyses, we assessed the associations between participants' ratings of tactics' coerciveness and their likelihood of eliciting confessions. That is, we sought to determine whether participants who believed tactics were more coercive also thought the tactics were more likely to elicit (true or false) confessions. Participants' composite coerciveness judgments were correlated with their true and false confession likelihood ratings. As is evident in Table 6, on average, the more coercive participants considered a tactic to be, the more effective they believed this tactic was at eliciting a confession, be it true or false. We further compared the magnitude of the associations between coerciveness and true confession likelihood

Table 3. Correlations showing the consistency of participants' ratings of coerciveness across tactics ($N = 264$)

	1	2	3	4	5	6
1. Accusation/re-accusation	—	.51***	.42***	.14*	.33***	-.08
2. Challenging denials		—	.17**	.45***	.40***	.36***
3. Confrontation with true evidence			—	-.22***	.23***	-.29***
4. Confrontation with false evidence				—	.25***	.70***
5. Promises of leniency					—	.09
6. Threats/use of harm						—

* $p < .05$.

** $p < .01$.

*** $p < .001$.

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Table 4. Correlations showing the consistency of participants' ratings of true confession likelihood across tactics ($N = 251-258$)

	1	2	3	4	5	6
1. Accusation/re-accusation	—	.63***	.35***	.27***	.32***	.10
2. Challenging denials		—	.31***	.21**	.31***	.14*
3. Confrontation with true evidence			—	.17**	.23***	.04
4. Confrontation with false evidence				—	.41***	.37***
5. Promises of leniency					—	.25***
6. Threats/use of harm						—

* $p < .05$.** $p < .01$.*** $p < .001$.

with the magnitude of the associations between coerciveness and false confession likelihood (Meng, Rosenthal, & Rubin, 1992). The correlation coefficients involving coerciveness and true confession likelihood were significantly larger for three of the tactics: challenging denials, promises of leniency, and threats of harm ($p < .05$, one tailed; see Table 6). These patterns indicated that participants' coerciveness ratings were more strongly associated with their beliefs that the tactics would elicit a true rather than a false confession. One exception, however, was evident. For the challenging denials category, coerciveness judgments were more strongly associated with eliciting false confessions than true confessions. Nevertheless, when looking at mean scores, challenging denials is still believed to be more likely to induce true confessions than false (see for example Tables 1 and 2).

Demographic Characteristics

Given the evident variability in participants' ratings, it was of interest to assess whether demographic characteristics distinguished individuals who tended toward particular beliefs. We focused on participants' support of the death penalty, age, gender, and race as potential predictors of their perceptions.

We examined participants' opinions of capital punishment in relation to their coerciveness and confession ratings. We combined individuals who supported the death penalty with those unsure of their opinion and compared them with individuals who opposed the death penalty. This delineation is similar to what might

Table 5. Correlations showing the consistency of participants' ratings of false confession likelihood across tactics ($N = 251-258$)

	1	2	3	4	5	6
1. Accusation/re-accusation	—	.84*	.71*	.56*	.61*	.36*
2. Challenging denials		—	.59*	.59*	.60*	.39*
3. Confrontation with true evidence			—	.56*	.56*	.30*
4. Confrontation with false evidence				—	.61*	.62*
5. Promises of leniency					—	.49*
6. Threats/use of harm						—

* $p < .001$.

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Table 6. Correlations between coerciveness of an interrogation tactic and it eliciting a true confession and a false confession ($N = 248-251$)

Tactic	Eliciting true confession	Eliciting false confession	p^a
Accusation/re-accusation	.199**	.175**	.38
Challenging denials	.231***	.353***	.04
Confront with true evidence of guilt	.141*	.125*	.42
Confront with false evidence of guilt	.254***	.177**	.17
Promises of leniency	.257***	.105	.03
Threats/use of harm	.367***	.233***	.03

^aOne-tailed test.

* $p < .05$, two-tailed test.

** $p < .01$, two-tailed test.

*** $p < .001$, two-tailed test.

be done in voir dire, because in capital cases only potential jurors fundamentally against the death penalty are automatically excluded from the jury. Participants opposed to the death penalty rated three tactics as more coercive than participants not opposed to and unsure about the death penalty. These included (a) challenging the suspect's denials ($M = 3.61$, $SD = 1.07$, $M = 3.30$, $SD = 1.01$ respectively); (b) promising the suspect leniency ($M = 3.80$, $SD = 1.08$, and $M = 3.44$, $SD = .96$); and (c) threats and use of harm ($M = 4.56$, $SD = 0.85$, and $M = 4.22$, $SD = 1.10$), all $t(260-261) \geq 2.01$, $p < .05$, $d \geq .25$. Of interest, despite differences in perceived coerciveness based on individuals' beliefs about the death penalty, these differences did not extend to participants' perceptions of whether tactics would elicit either true or false confessions. In other words, even though individuals opposed to the death penalty viewed certain interrogation tactics as more coercive than individuals not opposed to the death penalty, they did not believe that the interrogation tactics would be more likely to elicit a confession. Of note, because it was possible that individuals unsure of their support for the death penalty differ from others in their beliefs about interrogation tactic use, we re-conducted the aforementioned analyses with three groups (those in favor of, those opposed to, and those unsure about their support of the death penalty). Findings remained virtually identical, with individuals who supported and who were unsure not differing in their perceptions of the interrogation tactics, with the one exception: Those unsure rated accusation/re-accusation as more coercive than those in favor of the death penalty, $M = 3.19$, $SD = .80$, $M = 2.84$, $SD = .85$ respectively, $F(2, 262) = 5.13$, $p = .007$, $\eta^2 = .04$.

Although we had no *a priori* hypotheses regarding age, gender, or ethnicity differences, exploratory analyses examined how these demographic characteristics related to participants' perceptions of interrogations. Overall, few associations emerged. Correlations between age and the composite score (coerciveness and confession likelihood for each of the six types of interrogation tactic) revealed one significant association: younger age predicted higher ratings of the likelihood of presenting true evidence of guilt eliciting a true confession, $r = -.20$, $p < .01$. Similarly, t -tests comparing males' and females' coerciveness, likelihood of eliciting true confessions, and likelihood of eliciting false confessions mean scores across the six categories revealed only one significant gender effect: males believed that threats and use of harm were more likely to elicit a true confession than females ($M = 3.57$, $SD = 0.98$, $M = 3.29$, $SD = 1.12$ respectively), $t(256) = 2.12$, $p = .035$, $d = .27$.

Ethnic differences in participants' mean composite ratings (for the three types of prompt: coerciveness, and true and false confession likelihood) were examined via one-way ANOVAs. Comparisons focused on Caucasian, Asian, and Hispanic participants (African-American and American Indian participants were not included because of insufficient sample sizes in these groups). Across the ANOVAs, four significant effects emerged. One involved participants' coerciveness ratings in relation to confronting a suspect with true evidence of guilt, $F(2, 215) = 5.85$, $p = .003$, $\eta^2 = .05$. According to Bonferroni *post hoc* tests, Asians rated the tactic as more coercive than Caucasians ($M = 2.72$, $SD = 1.15$, $M = 2.15$, $SD = 1.13$ respectively), $p < .05$. Hispanics' ratings ($M = 2.60$, $SD = 1.17$) did not differ from the other two groups. Two significant effects of ethnicity emerged in participants' ratings of the likelihood of techniques eliciting a true confession: accusation/re-accusation, $F(2, 207) = 3.75$, $p = .025$, $\eta^2 = .03$, and confronting the suspect with true evidence of guilt, $F(2, 207) = 4.08$, $p = .018$, $\eta^2 = .04$. Hispanics rated both tactics as more likely to elicit a true confession than Caucasians ($M = 3.84$, $SD = .78$, and $M = 3.38$, $SD = .79$, for Hispanics' and Caucasians' accusation/re-accusation ratings, respectively; and $M = 3.92$, $SD = 0.82$, and $M = 3.40$, $SD = 0.93$, for Hispanics and Caucasians confronting the suspect ratings, respectively). Hispanics' ratings regarding confronting a suspect with true evidence of guilt were also significantly higher than Asians' ratings ($M = 3.47$, $SD = 0.90$), all p s $< .05$. Finally, a significant effect of ethnicity on participants' ratings of the likelihood of leniency promises inducing false confessions, $F(2, 201) = 3.78$, $p = .024$, $\eta^2 = .04$, revealed that Hispanics found the tactic more likely to elicit a false confession than did Asians ($M = 2.79$, $SD = 1.27$, and $M = 2.21$, $SD = 0.98$), $p < .05$. Overall, these data hint that Hispanics are slightly more likely to believe that tactics can elicit confessions than individuals of other ethnic backgrounds. However, given the number of analyses conducted, the effects could be due to chance. If the tendency is true, the magnitude of the difference is small.

In summary, few demographic differences emerged in participants' evaluations of interrogation tactics. Moreover, evaluations did not vary in a cogent or meaningful way with either gender or ethnicity, and, across all the measures, group differences were small in magnitude.

Individual Interrogation Tactics and Evidence Importance

In addition to composite scores for each type of interrogation tactic, descriptive statistics of participants' ratings for the individual tactics are also quite informative. Specifically, participants' mean ratings of the 18 interrogation tactics' coerciveness, likelihood of eliciting a true confession, and likelihood of eliciting a false confession are presented in Table 6. A brief review of the coerciveness ratings suggests that participants generally believed that the interrogation tactics were slightly coercive, with most mean scores above 3 (the midpoint of the scale). Additionally, all interrogation techniques were considered more effective at eliciting true rather than false confessions.

Of particular interest was the percentage of individuals who believed that a given tactic was likely to elicit a false confession. The final column of Table 6 shows the percentage of participants who rated each tactic as likely (score of 4) or extremely

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Table 7. Mean ratings for the importance of evidence type ($N = 263\text{--}264$)

Type of evidence	Importance rating
DNA evidence	4.29 (0.71)
Confession of guilt	3.08 (0.97)
Eyewitness	3.41 (1.05)
Suspect's bad character	2.57 (0.99)

Scale ranges from 1 = not at all important to 5 = extremely important.

likely (score of 5) to elicit a false confession. A majority of participants believed that physically assaulting the suspect may well lead the suspect to falsely confess (60.7%). Given the overt and concrete actions of the interrogator, which can lead to immediate physical harm, participants' responses are perhaps not surprising. However, with the exception of harm-related interrogation tactics such as physically assaulting the suspect, only a minority of participants believed that the other tactics, most of which involved psychological interrogation practices, would lead to a false confession, with the percentages of respondents indicating that the techniques were likely or extremely likely to lead to a false confession ranging from 10.8% to 33.6%.

Finally, we asked participants to rate the importance of confession as well as other types of evidence (see Table 7), and how long suspects should be allowed to be interrogated. Participants rated confession evidence as important to solving a crime, with a mean rating of 3.08 (scale ranged from 1 = not at all important, to 5 = extremely important). However, relative to other common kinds of evidence, confession evidence was rated as less important than both eyewitness testimony and DNA evidence, with mean ratings of 3.41 and 4.29, respectively, paired t -test $t(262) > 4.30$, $p < .001$. However, confession evidence was rated as more important than bad character evidence ($M = 2.57$), $t(262) = 6.72$, $p < .001$, in terms of importance in solving a case. Interrogation duration was also measured as a subtle indicator of knowledge regarding interrogations and confessions. We identified extreme outliers for both variables by creating box-plots of the raw data and deleted any values greater or less than three times the interquartile range (the range which contains 50% of the scores). Participants estimated that an average of 4.09 hours of interrogation would be necessary to elicit a confession from a suspect (20 extreme outliers removed), with a range of 1 to 13 hours. The average interrogation duration that should be permitted was estimated at 7.63 hours, with a range of 1 to 24 hours (30 extreme outliers removed). Without deleting extreme outliers, the means were 7.88 and 13.72 hours, respectively, and the ranges were 1 to 72 and 1 to 500 hours, respectively.

In summary, a fairly stable pattern of participants' beliefs emerged. Participants were consistent in their beliefs about interrogation tactics' coerciveness and likelihood to elicit true and false confessions. Additionally, they seemed to recognize that interrogation tactics are slightly coercive, yet they also appeared to believe the tactics work in the intended manner: interrogation techniques elicit true but not false confessions.

DISCUSSION

The overarching purpose of the present study was to examine potential jurors' perceptions of psychological interrogation methods, including not only how coercive individuals perceived interrogation techniques to be, but also how likely they thought

the techniques were to elicit both true and false confessions. At least three important findings emerged, each of which is discussed in turn.

First, individuals, at least in our jury-eligible college student sample, recognized that psychological pressure and other nonphysical persuasion interrogation techniques may be psychologically coercive. Respondents rated accusations, challenging denials, and implicit and explicit promises of leniency as slightly coercive; they recognized confrontations with false evidence of guilt and implicit and explicit threats of harm as very coercive. The only category of techniques they did not perceive to be coercive was confronting a suspect with true evidence of guilt. Strikingly, respondents rated false evidence ploys as far more coercive than true evidence ploys. That respondents rated false evidence ploys as coercive is consistent with the survey by Skolnick and Leo (1992) of police officers, church members, and college students finding that most subjects regard the interrogation technique of confronting a suspect with false evidence of guilt as unfair. By contrast, confronting a suspect with true evidence of guilt was perceived as not coercive. Of course, underlying the latter technique is the assumption that the police's evidence is factually true. With respect to promises and threats, the findings in the present study are consistent with the experimental demonstration by Kassin and Wrightsman (1980, 1981) of the *positive coercion bias*, the well documented tendency for people to deem promises of leniency as less coercive than threats of harm, which has been shown to be true even when the two are objectively equivalent in the amount of behavioral compliance they produce (Wells, 1980). Participants rated explicit and implicit threats of physical harm as coercive with mean ratings of 4.33 and 4.07 respectively, while explicit and implicit promises of leniency received lower ratings, with mean ratings of 3.67 and 3.37 respectively.

A caveat is in order here, however. Although participants correctly recognized that psychological pressure and other nonphysical persuasion interrogation techniques may be coercive, they reported an unadjusted, mean required interrogation time of 7.88 hours to elicit a confession, a duration that is many times the average observed interrogation length reported in field studies (Leo, 1996; Feld, 2006a,b) as well as much longer than the average interrogation length reported by police interrogators themselves (Kassin et al., 2007). Archival analysis has demonstrated that the likelihood of eliciting a false confession increases as the duration of an interrogation increases (Drizin & Leo, 2004); longer interrogations put a suspect at risk for false confession (Davis & O'Donohue, 2004; Kassin et al., unpublished manuscript). This is not surprising: as the length of interrogation increases, so too does the suspect's fatigue and exhaustion, compromising cognitive and self-regulatory functions, impairing the person's ability or motivation to resist influence, and increasing interrogative suggestibility via deficits in concentration, speed of thinking, ability to control attention, and ability to ignore irrelevant or misleading information (Blagrove, 1996; Davis & O'Donohue, 2004). Surprisingly, when asked how long an interrogation should be permitted to last, participants provided an unadjusted, mean required of 13.73 hours, which is strikingly close to the average interrogation duration of 16.3 hours reported in the study by Drizin & Leo (2004) of 125 proven false confessions. The willingness of the participants to subject a suspect to almost 14 hours of interrogation that they have deemed as coercive suggests that, although they recognize the coercive nature of psychological interrogation methods, they do not fully recognize the potentially coercive nature of the interrogation event.

Second, participants recognized that psychological interrogation methods are likely to elicit true confessions. With the exception of giving a suspect a lie detector test and truthfully telling him or her that the results are inconclusive, participants rated all of the interrogation techniques as likely to elicit a true confession from a guilty suspect. Thus, participants understand the power of psychological interrogation techniques to elicit confessions, in this case, though, only from the guilty. Participants rated confronting a suspect with false evidence of guilt as most likely to elicit true confessions, followed by promises of leniency and accusations/re-accusations.

Third, although participants rated psychological interrogation techniques as coercive and likely to elicit true confessions, they did not appear to believe that psychological interrogation techniques were likely to elicit false confessions. This perception is at odds with the empirical social science research on police interrogation and false confessions. Certainly it is not possible to quantify the precise risk any interrogation technique poses for eliciting a false confession (for ethical reasons we cannot coerce false confessions in university laboratories, much less do so while holding all other relevant variables constant), nor is it possible to establish a base rate regarding how often such techniques actually lead to false confessions in actual cases. Nonetheless, it is a well established empirical finding, across a variety of methodologies, that psychologically coercive interrogation methods, when applied to the innocent, can and do elicit false confessions (Davis & O'Donohue, 2004; Drizin & Leo, 2004; Gudjonsson, 2003; Kassin et al., unpublished manuscript; Leo, 2008; Ofshe & Leo, 1997).

In the current study, except under the direct threat of physical violence and beating the suspect—techniques widely recognized to elicit unreliable information (Leo, 2004), including by the legal system itself (*Brown v. Mississippi*, 1936)—participants rated the likelihood of eliciting true confessions as substantially higher than eliciting false confessions in all interrogation techniques. For example, with regard to presenting false evidence, participants rated this technique as highly coercive, but not necessarily likely to elicit false confessions. In direct contrast to participants' beliefs, controlled laboratory research indicates that false evidence ploys drastically increase a subject's compliance with investigators as well as the likelihood of eliciting false admissions to experimentally induced noncrimes such as mistakenly striking a computer key when told not to do so as part of a learning time experiment (Horselenberg, Merckelbach, & Josephs, 2003; Kassin & Kiechel, 1996; Redlich & Goodman, 2003). Analysis of real-world interrogations and confessions also contrasts with our participants' beliefs: Ofshe and Leo (1997) found that false evidence ploys lead to a perception of hopelessness, a necessary condition for the giving of false confessions by innocent suspects (Leo, 2008). Moreover, virtually every documented police-induced false confession has contained false evidence ploys (Drizin & Leo, 2004; Kassin et al., unpublished manuscript; Leo & Ofshe, 1998).

As another example of the seeming disconnect between participants' beliefs and empirical research, both laboratory studies (Russano, Meissner, Narchet, & Kassin, 2005) and archival studies of real-world interrogations and confessions (Ofshe & Leo, 1997) indicate that implicit promises of leniency via minimization as well as explicit offers of leniency increase the likelihood of both true and false confessions. Participants in the current study recognized that these techniques increased the risk of the former but not the latter, again demonstrating that potential jurors do not

appear to understand the potential link between coercive interrogation and false confessions. The apparent lack of understanding is critical. Jurors are in the unique position of not only evaluating the coerciveness of particular interrogation tactics, but also the veracity of the confession that was a product of these tactics. Participants' beliefs may well affect their judgments regarding a confession and, as a result, the decisions they render in a given case.

LIMITATIONS

Although the present study offers new insight into potential jurors' evaluations of interrogation methods, limitations must also be noted. First, the sample was not chosen randomly and, although all participants were jury eligible, they were not selected from a jury pool. Instead, the sample was comprised of educated, young, college students, who were enrolled in an introductory criminology course. Many studies have failed to uncover dramatic differences, however, between college student jury eligible samples and actual jurors in terms of their perceptions of various forms of evidence (e.g. Bornstein, 1999; Quas, Thompson, & Clarke-Stewart, 2005). Also, the fact that a highly educated sample does not appear to recognize the potential link between coercive interrogation and false confession suggests that a sample with more varied education and possibly ethnicity would not know the connection either.

Second, our study examined participants' general perceptions of various interrogation techniques' coerciveness and likelihood of eliciting (true and false) confessions. Whether and how participants' general beliefs relate to and differ from their judgments of a given confession in a specific case is unclear, especially a case that involved a violent crime. The nature of a crime often affects individuals' perceptions of a defendant's culpability (Ghetti & Redlich, 2001), and, in the present study, participants' general beliefs may not extend to their specific evaluations in a given case. It may be, as the study by Kassin and Sukel (1997) suggests, that, even when jurors recognize that interrogators used coercion to elicit confession evidence, this fact is not likely to temper their judgments of the defendant's guilt.

Third, in the real world, juries and expert witnesses are not likely to evaluate individual interrogation techniques alone for the likelihood that they might produce a false confession. Other than techniques that are regarded as inherently coercive, such as physical deprivations, threats of harm, and promises of leniency, one cannot easily estimate the coerciveness of a single technique in isolation. It is really the larger context that is created by interrogation techniques and how they combine with one another in a sequential process of influence that is most important in understanding an interrogation's potentially coercive effect on the decision-making of a custodial suspect (Ofshe & Leo, 1997).

Fourth, as mentioned, although empirical research has demonstrated links between psychological interrogation tactics and false confessions, we do not know the actual base rates of false confessions in actual cases. Thus, our findings must be tempered in light of this inevitable piece of missing data. Overall, continued research is needed to investigate beliefs about interrogation methods across a more diverse sample. Future research might also compare the kinds of accusatory interrogation method surveyed in this study with noncoercive "investigative interviewing"

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techniques (see Gudjonsson, 2007). In addition, research is needed to assess the extent to which participants' general beliefs extend to and influence their judgments about a specific suspect's confession in a given case.

IMPLICATIONS AND CONCLUSION

There is a large body of empirical social science research demonstrating that false confessions occur and analyzing their correlates, causes, and consequences (Davis & O'Donohue, 2004; Gudjonsson, 2003; Kassin et al., unpublished manuscript). However, to date only one published survey (Chojnacki et al., 2008) and one unpublished survey (see Leo, 2008) addressing the public's perception about false confessions have been conducted. Public opinion about police interrogation and confessions remains largely untapped. The current study represents an important first step toward advancing this knowledge. These findings provide the first empirical demonstration that average citizens may not understand the potential link between psychologically coercive interrogation and false confessions. The popular belief that innocent individuals do not falsely confess unless they are tortured or mentally ill has been described as "the myth of psychological interrogation" (Leo, 2001). Our findings offer empirical support for this myth.

This study also offers empirical support for the potential value of expert witness testimony in cases involving alleged false confessions. Although at the general level potential jurors recognized that interrogation techniques may be coercive, they also perceived the techniques as helpful, in that they likely elicit true but not false confessions. Experts may inform jurors that coercive interrogation techniques can lead to false confessions and how and why they may do so. If we cannot be sure that what potential jurors believe about false confessions is accurate, then we cannot be sure that real jurors will make an accurate determination of the reliability of confession evidence without the additional assistance provided in the testimony of an expert witness. The use of expert witness testimony on police interrogation and false confessions may therefore prevent some number of wrongful convictions in false confession cases.

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